

Description

Stainless Steel Grade 201/1.4372 is an austenitic chromium-nickel-manganese stainless steel developed to conserve nickel. It is a lower-cost alternative to traditional 304 stainless steel. Grade 201 offers high tensile strength and good corrosion resistance, suitable for various applications where cost savings are a priority. While it has less corrosion resistance compared to 304 stainless steel, it remains adequate for many applications.

Chemical Composition

- Chromium (Cr): 16.0 - 18.0%
 - Nickel (Ni): 3.5 - 5.5%
 - Manganese (Mn): 5.5 - 7.5%
 - Silicon (Si): $\leq 0.75\%$
 - Nitrogen (N): $\leq 0.25\%$
 - Carbon (C): $\leq 0.15\%$
 - Phosphorus (P): $\leq 0.060\%$
 - Sulfur (S): $\leq 0.030\%$
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Mechanical Properties

- Tensile Strength: 515 - 725 MPa
 - Yield Strength: 275 - 520 MPa
 - Elongation: 35 - 60%
 - Hardness: 95 HRB
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Thermal & Physical Properties

- Density: 7.93 g/cm³
- Melting Range: 1400 - 1455°C
- Specific Heat (0-100°C): 500 J/kg·K

- Thermal Conductivity: 16.3 W/m·K
 - Electrical Resistivity: 0.73 $\mu\Omega\cdot\text{m}$
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Other Designations

- UNS: S20100
 - EN: 1.4372
 - JIS: SUS201
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Fabrication and Heat Treatment

- Formability: Grade 201/1.4372 can be easily formed and welded using standard techniques. It is more challenging to cold work than 304 but offers good formability.
 - Weldability: Weldable by common methods, including TIG, MIG, and resistance welding. Post-weld annealing is recommended to maintain corrosion resistance.
 - Heat Treatment: Annealing temperature range is 1010 - 1093°C, followed by rapid cooling. Not hardenable by heat treatment.
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Applications

- Cookware: Pots, pans, and kitchen utensils.
 - Appliances: Refrigerators, dishwashers, washing machines.
 - Architectural: Exterior accents, trim, and roofing.
 - Automotive: Decorative trim and exhaust systems.
 - Food Service: Food handling and processing equipment.
 - Industrial: Chemical and textile industries, particularly where high strength and wear resistance are required.
 - Furniture: Indoor and outdoor furniture.
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Supplied Forms

- Bars

- Wires
 - Coil
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Features

- Corrosion Resistance: Good resistance to atmospheric corrosion and acidic environments, though less than 304 stainless steel.
- High Strength: Higher tensile strength than 304 stainless steel, making it suitable for applications requiring durability and strength.
- Cost-Effective: Lower nickel content makes it a more economical choice compared to 304 stainless steel.
- Good Formability: Can be easily formed and welded using standard techniques.
- Magnetic: Slightly magnetic in the annealed condition, becoming more magnetic when cold worked.
- Temperature Tolerance: Can withstand moderately high temperatures.

